

1. On certain Points in the Anatomy of the Cunning Bassarisc, *Bassariscus astutus*. By FRANK E. BEDDARD, M.A., F.R.S., Prosector to the Society, Examiner in Zoology in the University of London.

[Received March 1, 1898.]

The opportunity of dissecting this imperfectly known Carnivore was afforded me by the death of a specimen acquired by the Society some two years since, the second example which has been exhibited alive at the Gardens. The abdominal viscera of the animal at its death were healthy to all appearance; but the skin in the neighbourhood of the anus had been macerated away—perhaps by diarrhœa, as the intestines were nearly empty and the animal had not taken food for a week. The tongue and palate were also diseased. Its body was, however, enormously fat, internally as well as externally.

So far as I am aware, the only accounts of the soft parts of this animal are by M. Gervais¹ and Sir W. H. Flower². The paper of the last-named naturalist is his well-known memoir upon the classification of the Carnivora, and deals chiefly with the skull; but in it he confirms M. Gervais's statement of the absence of a cæcum, which is so important a classificatory point. This paper established beyond question the association of *Bassariscus* with the Arctoid division of the Carnivora. Such new facts as I have to describe in the present communication are purely confirmatory of that conclusion.

§ Brain.

The brain conforms in every respect to the Arctoid type as defined by Sir W. Flower³, and, as is the case with smaller brains, it is less convoluted than is, for instance, the larger brain of *Gulo*⁴ figured by myself.

The hemispheres are divergent posteriorly, displaying most of the cerebellum. The fissure dividing the sagittal from the parietal gyrus does not reach the posterior margin of the cerebrum; it does so more nearly on the right side than the left. On the right side also there is a bridging convolution uniting the sagittal with the parietal gyrus; there are faint indications of this on the left side. As is usual in Carnivorous (not merely Arctoid) brains, the sagittal gyrus is sharply folded upon itself anteriorly, the sulcus which divides this region from the middle portion of the gyrus reaching the rhinal fissure below. The sagittal gyrus winds round the

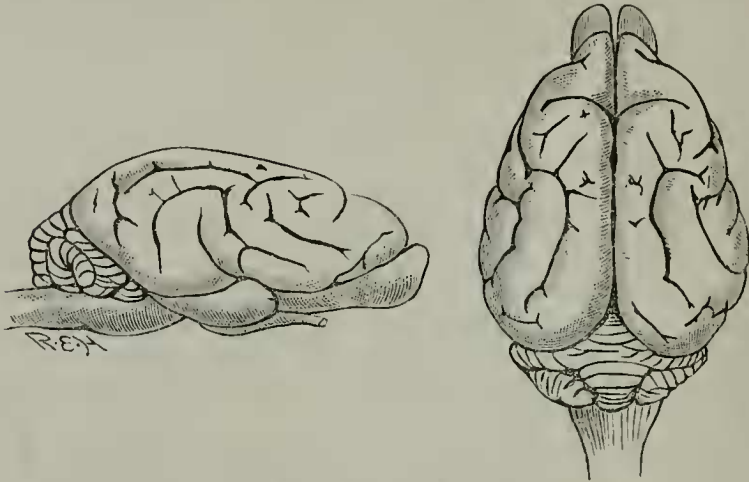
¹ In 'Voyage de la Bonite,' 1841.

² "On the Value of the Characters of the Base of the Cranium, &c.," P. Z. S. 1869, p. 34.

³ "On the Anatomy of the Proteles," P. Z. S. 1869, p. 482.

⁴ "On the Brain of *Gulo*," P. Z. S. 1895, p. 140, fig. 1.

crucial sulcus, which is situated rather far forward. This part of the gyrus is perfectly smooth, there being no precrucial sulcus.



Brain of *Bassariscus astutus*.

Posteriorly to the crucial sulcus the sagittal gyrus, as is the case with the corresponding gyrus in other Arctoids, is marked by two fissures: one of these starts from the angle of the parietal sulcus and runs for a short distance anteriorly; the other is shorter and lies to the outside of it and is unconnected with any other furrow.

The anterior recurrent portion of the sagittal gyrus is much narrower than I have seen it in any Arctoid, not even excepting the smaller *Ictonyx*.

§ Alimentary Canal.

The *palate* was, as has been already mentioned, somewhat diseased posteriorly: I am not, therefore, able to be certain as to the arrangement of the ridges in this region. In the anterior part of the palate, just behind the incisor teeth, were three triangular cushions, their apices converging posteriorly. Immediately behind and springing from the interval between the canine and the first premolar is a ridge which does not meet its fellow in the middle line. Then come four complete ridges springing from the basis of the teeth, of which the first is very much more concave (backwards) than those which follow.

The *stomach* of the animal is not greatly elongated. It is, perhaps, slightly more globular than that of *Ælurus fulgens*, figured and described by Sir W. Flower¹. Its length when distended was 3 inches, by a greatest diameter of 2 inches. The omentum, loaded with fat, is not attached accurately along the greater curvature of the stomach. It is so attached for, perhaps, the first third of that curvature; afterwards it takes, so to speak, a short cut to the basis of the œsophagus, the line of its attachment being still curved and parallel to that of the greater curvature.

¹ "On the Anatomy of *Ælurus fulgens*," P. Z. S. 1870, p. 762.

The *spleen* measured $2\frac{3}{4}$ inches in length; it was rather broader at one end than at the other, but had no extra lobe or even indications of such.

The *pancreas* is rather peculiar, but apparently not unlike that of *Helictis*, in which the late Prof. Garrod described¹ it as "seven inches in length, its left terminal two inches being in relation with the narrow spleen." In *Bassariscus* this gland is L-shaped, the meeting-point of the two limbs, situated at the angle of the duodenum, being much wider than either of them is in its course. The upper limb, that which runs parallel with the commencement of the duodenum, is barely three inches in length; the limb which passes outwards in near relation to the spleen is five inches in length.

The *intestine*, from the duodenum to the anus, is as nearly as possible five feet in length. There is no cæcum, but the junction between the small and large intestines seems to be marked (as it is, for example, in *Cryptoprocta*²) by an unusually long Peyer's patch. The Peyer's patches in the animal were particularly well marked, owing to their deep pigmentation. This patch, to which I now refer, was narrow but no less than three inches in length. After it the internal surface of the intestine was rugose. This of course supports the view that the long Peyer's patch lies on the extremity of the small intestine. In front of this patch were nine or ten others, none of which, however, measured more than half an inch in length.

The *liver* of *Bassariscus* is not remarkable in any special way. The relative size of its component lobes may be thus expressed:—

$$\text{L.L. } 2 > \text{L.C. } 2\frac{1}{2} < \text{R.C. } 2\frac{1}{2} > \text{R.L.} = \text{C } 2 > \text{Sp.}$$

The right central lobe, which is the largest, is on the abdominal aspect completely divided into two by the cystic notch; on the dorsal surface the notch only extends as far as the fundus of the gall-bladder. The right half of the right central lobe is very slightly furrowed in a longitudinal direction. The caudate lobe is bifid at its extremity and has a small nearly free lobe attached to its diaphragmatic surface. The spigelian lobe is notched faintly at the extremity and also at both sides a little way from the extremity. The only liver which I have among the stores in my department with which to compare the liver of *Bassariscus* is that of *Ælurus fulgens*, which has been described and figured by Flower³. The chief differences which *Bassariscus* shows are: (1) the much greater relative size of right central; (2) the freedom of the right lateral and caudate lobes (they are firmly attached by their apposed surfaces in *Ælurus*); (3) the much smaller size of the spigelian lobe.

¹ "Notes on the Anatomy of *Helictis subaurantiacus*," P. Z. S. 1879, p. 306.

² F. E. Beddard, "On the Visceral and Muscular Anatomy of *Cryptoprocta*," P. Z. S. 1895, pp. 431, 432.

³ "On the Anatomy of *Ælurus fulgens*," P. Z. S. 1870, p. 763.